

Growing Up Waterwise

Frisco's Waterwise Programs

Melody Emadiazar

Water Education Coordinator



Location



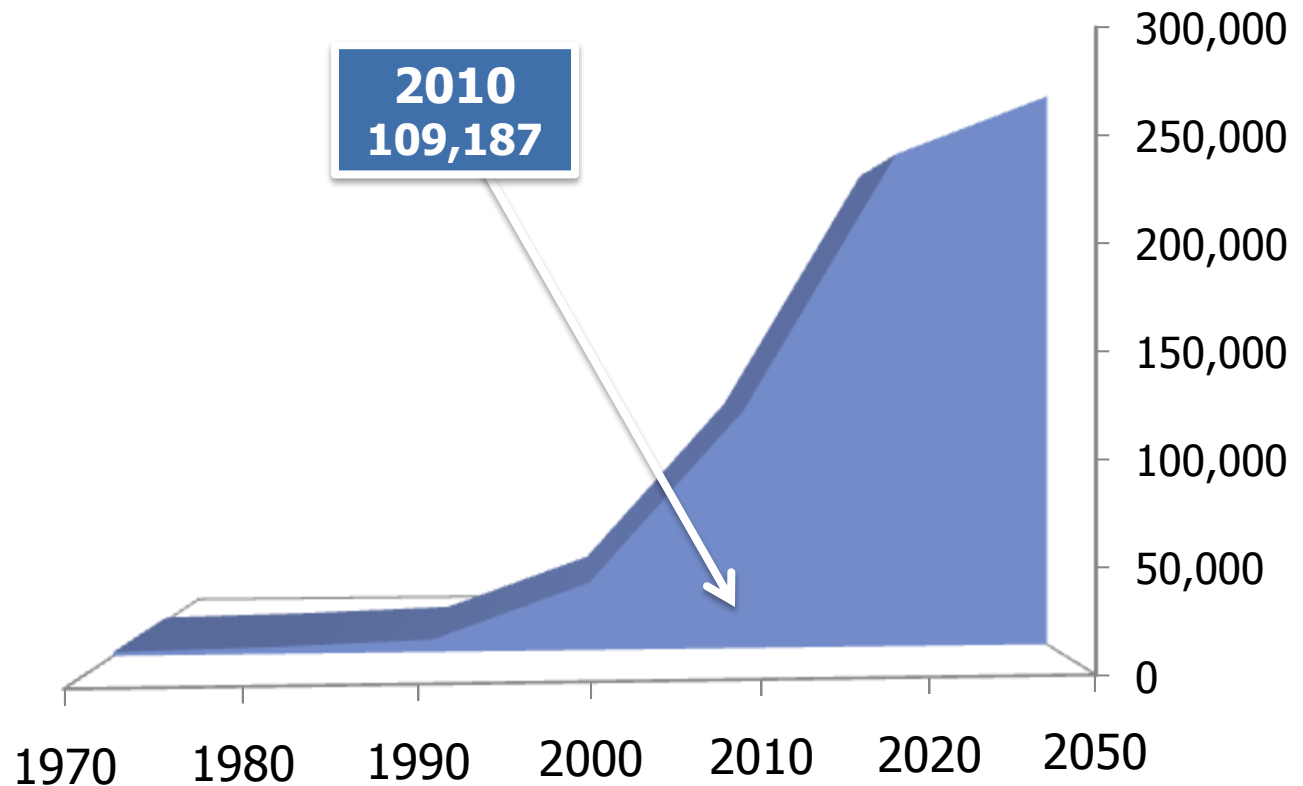
Frisco, Texas

- Denton and Collin County
- 70 square miles
- Bordered by McKinney, Plano, Allen, Little Elm, The Colony, and Prosper
- 40% Developed

Population

Year Residents

1970	1,845
1980	3,420
1990	6,138
2000	33,714
2009	106,036
2010	110,000
2020	148,000
2050	280,000

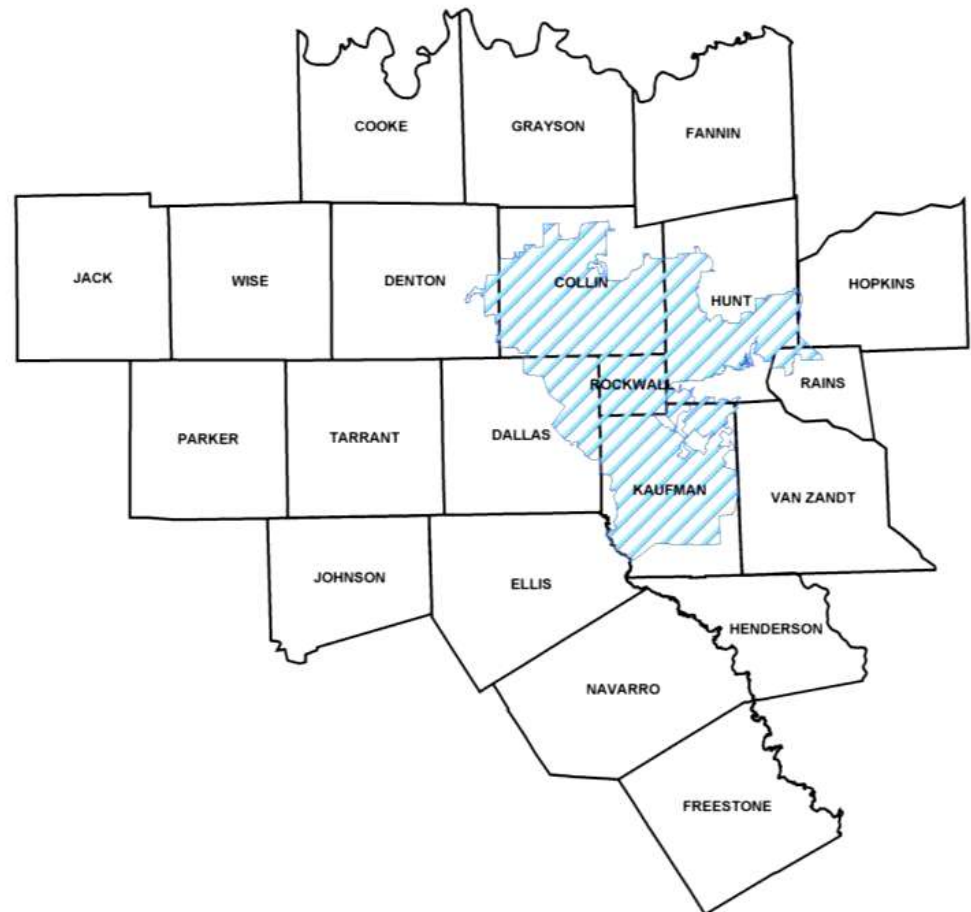


North Texas Municipal Water District

Treated Service Area

- **1.7 million people**
- **49 Customer Cities, Towns, and Water Supply Corporations**
- **13 Member Cities**

Allen, Farmersville, Forney, Frisco, Garland, McKinney, Mesquite, Plano, Princeton, Richardson, Rockwall, Royse City, Wylie



NTMWD Water Supply Reservoirs





A brown wooden sign with white text stands on two wooden posts. The sign is located on the right side of a gravel boat ramp. The background shows a wide, flat green field under a clear blue sky, with some trees on the left and right sides of the field.

Boat Ramp

**Loading and
Unloading Only**

**No Wake Zone
Idle Speed Only**

**Flotation Devices
Required**

**No Swimming
or Wading**



ELEVATION 475.05
10/10/2006



ELEVATION 496.72
7/24/2007



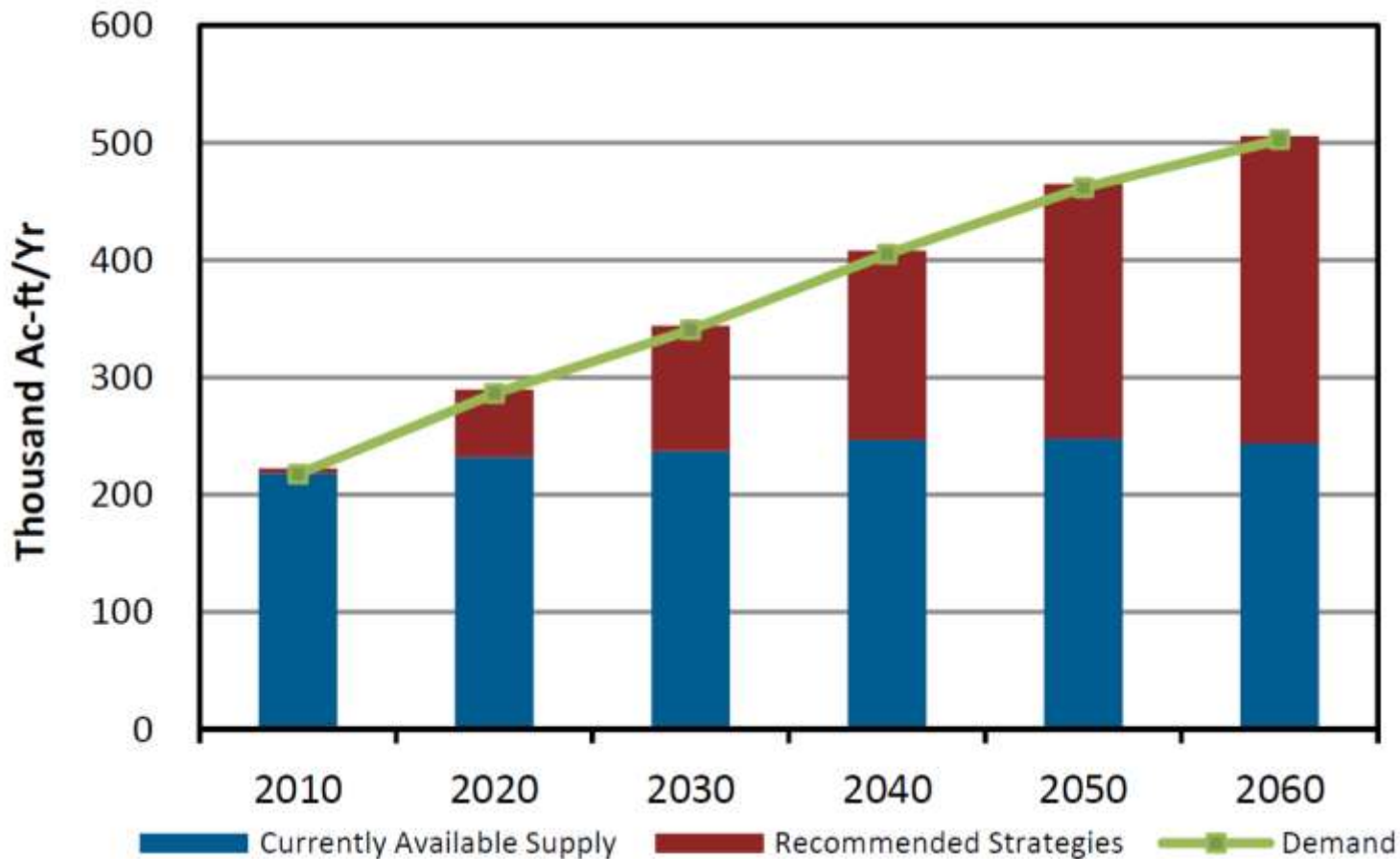
ELEVATION 475.05
10/10/2006



ELEVATION 496.72
7/24/2007

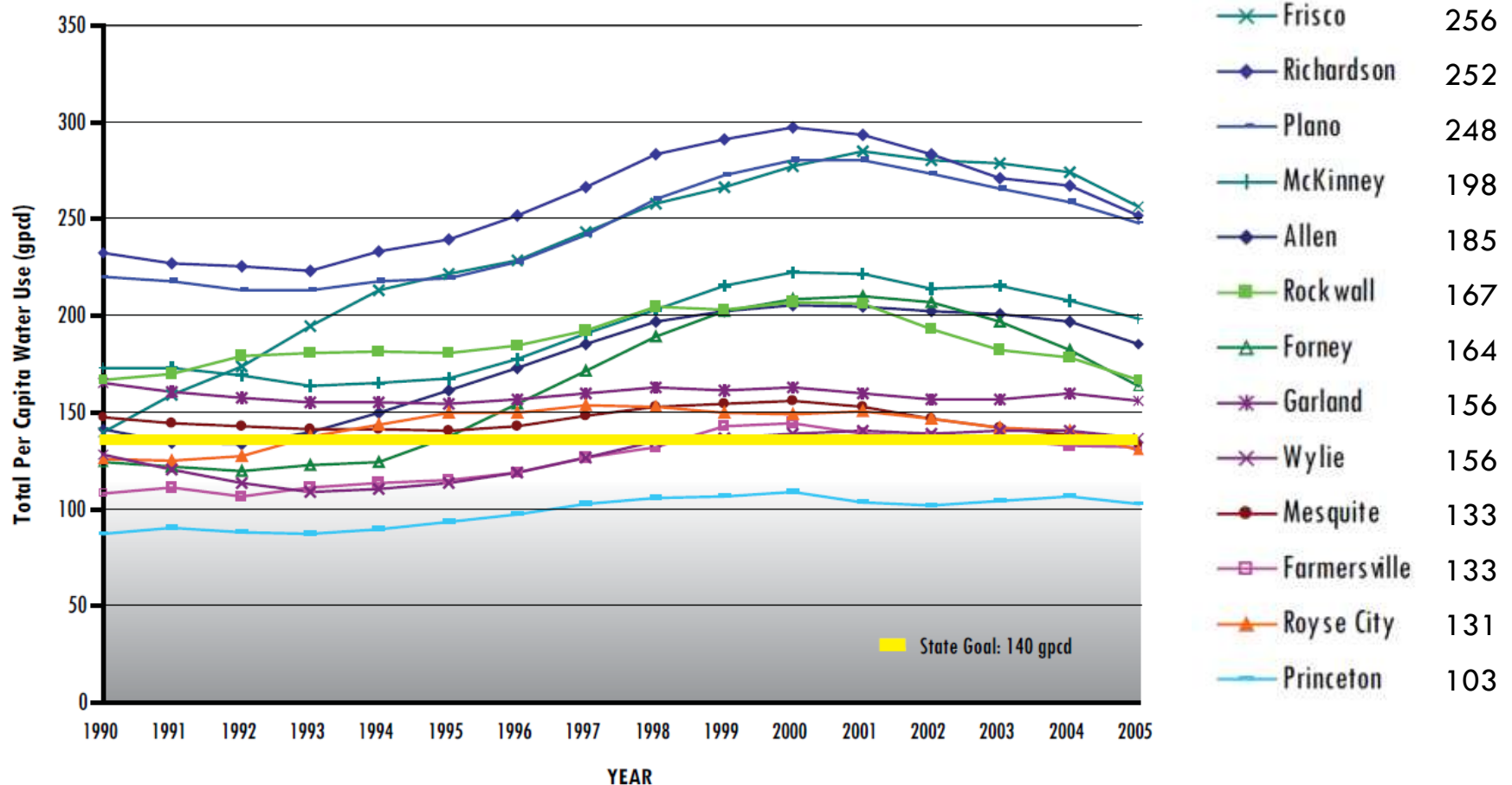
Future Supply/Demand

Collin County



Water Usage Per Person

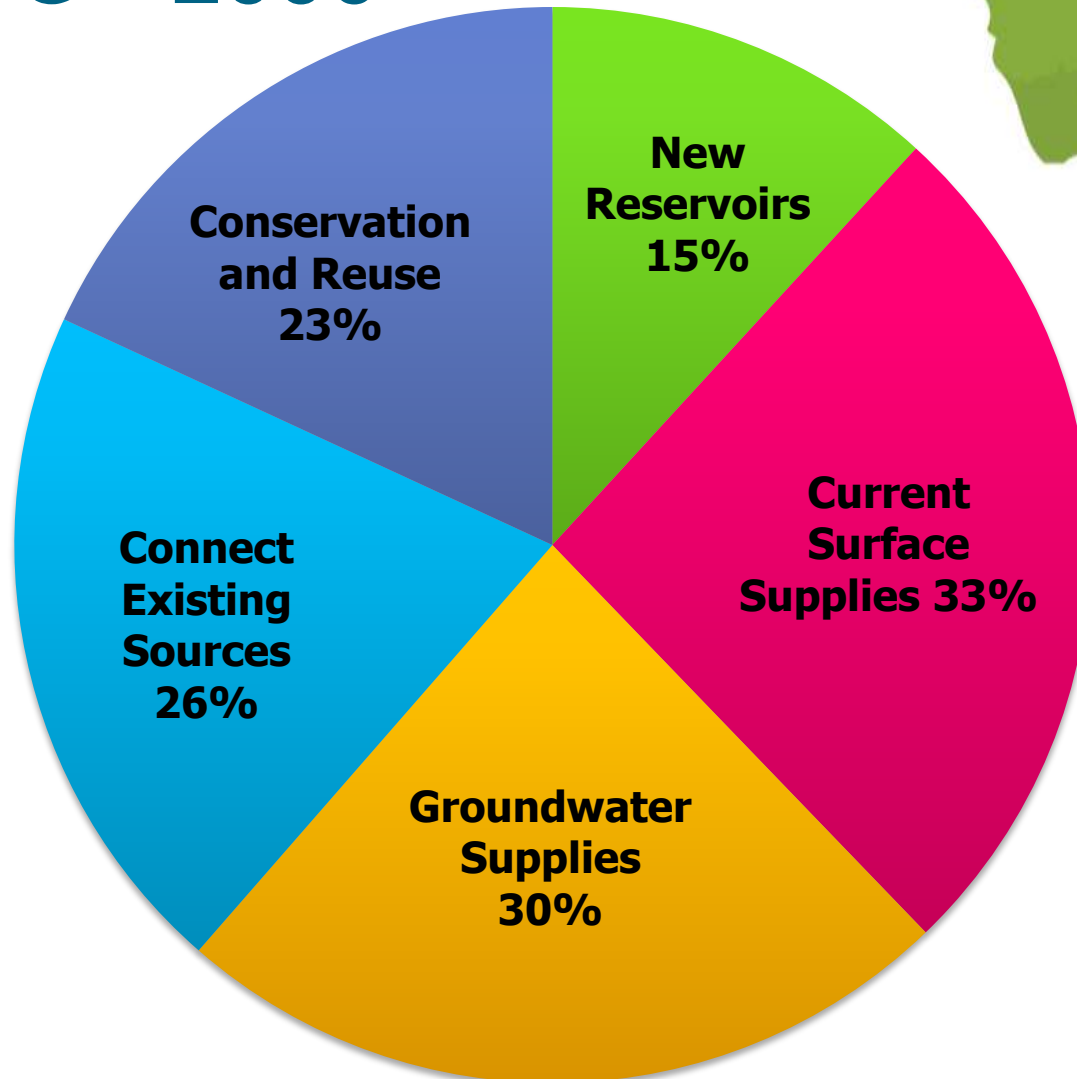
5-Year GPCD Average for NTMWD Member Cities



Source: North Texas Municipal Water District

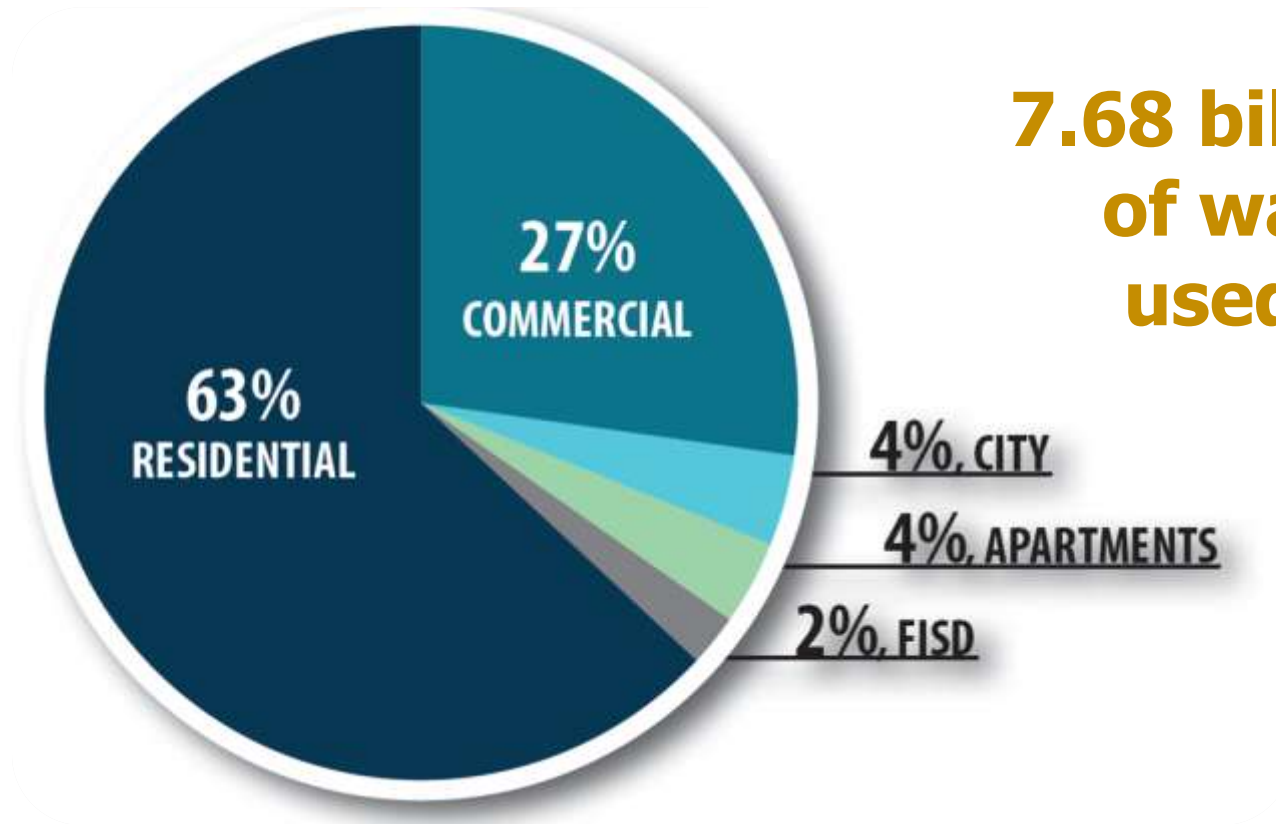
Water Resources

Region C - 2006



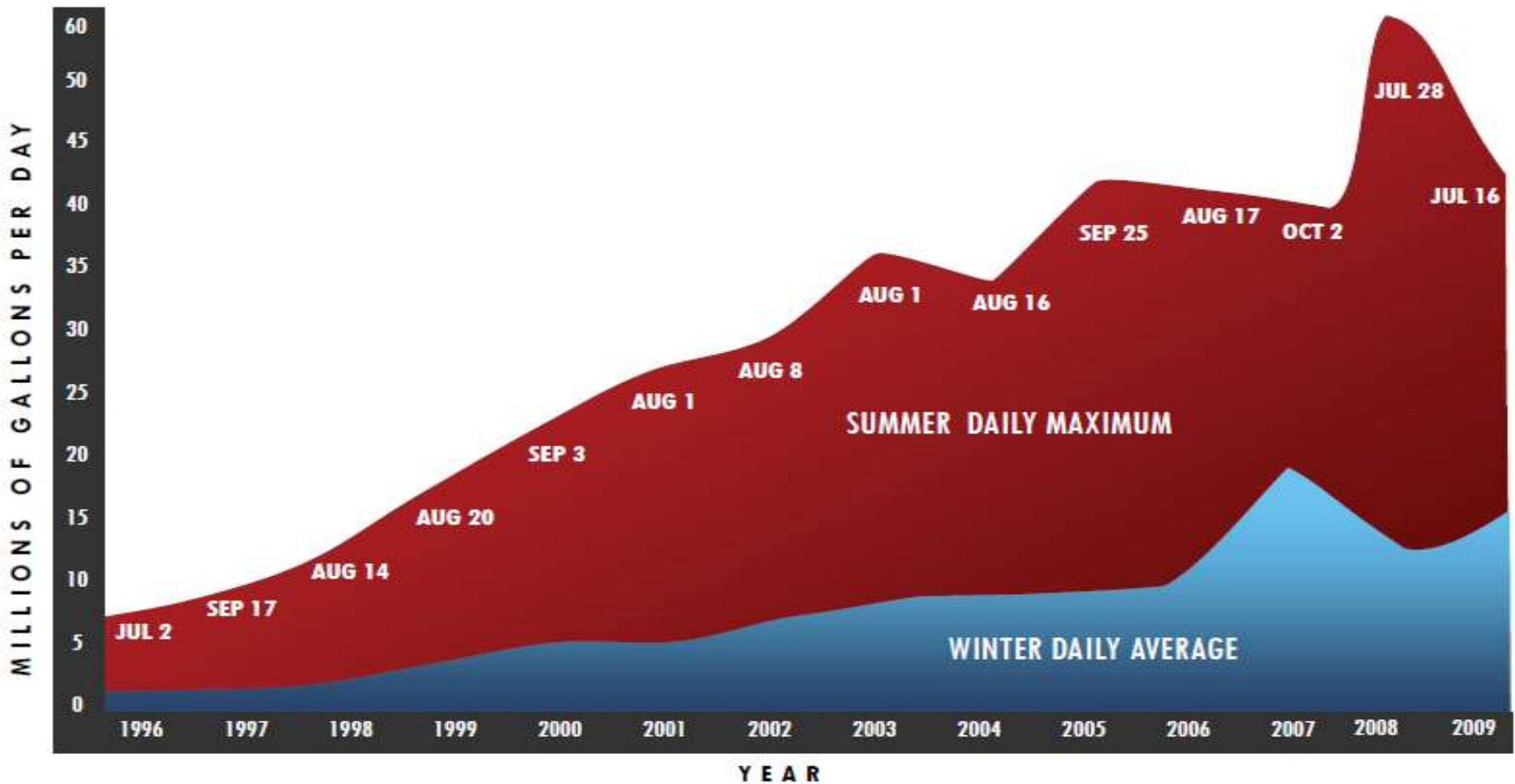
Water Usage

From 2009

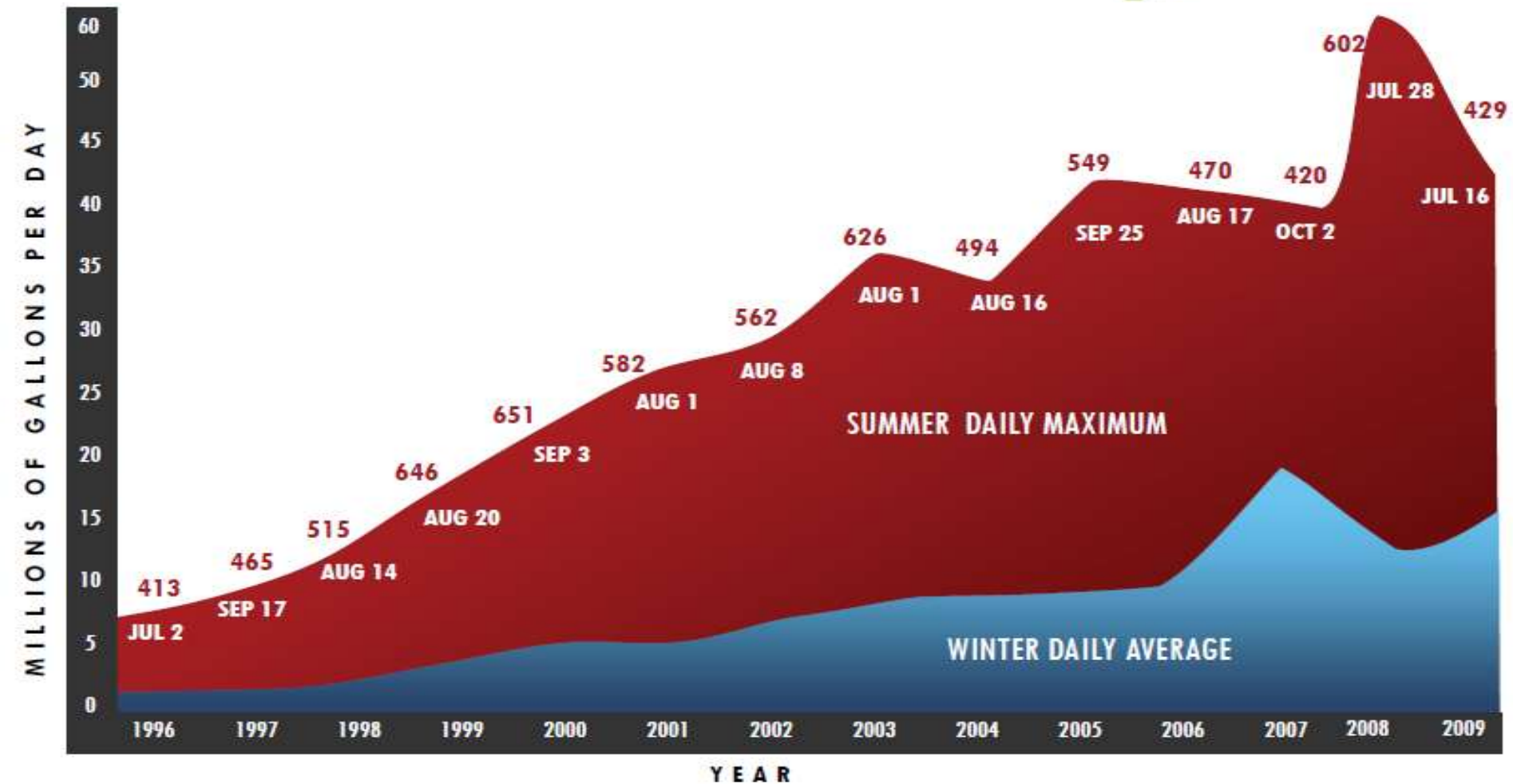


**7.68 billion gallons
of water were
used in 2009**

Seasonal Water Use



Maximum GPCD



Water Management Plan



Water Conservation – Frisco Based

- **Water Efficiency Plan (Year Round) – Daylight Saving Time**
- **Emergency Service Levels I and II**

Drought Contingency – NTMWD Based

- **Stage 1: Voluntary – 2% Reduction**
- **Stage 2 : Mandatory – 5% Reduction (two days/week watering)**
- **Stage 3 : Mandatory – 10% Reduction (one day/week watering)**
- **Stage 4 : Mandatory – 10%+ Reduction (no outdoor watering)**

Water Efficiency Plan



Common Outdoor Water Uses	FALL & WINTER
	CENTRAL STANDARD TIME
Using a Sprinkler System	1 Day/Week Recommended
Time-of-Day Restrictions	None

Water Efficiency Plan



Common Outdoor Water Uses	FALL & WINTER	SPRING & SUMMER
	CENTRAL STANDARD TIME	DAYLIGHT SAVING TIME
Using a Sprinkler System	1 Day/Week Recommended	2 Days/Week Recommended
Time-of-Day Restrictions	None	Watering prohibited from 5am – 8am & from 10am – 6pm

Water Efficiency Plan

Reminder

Residential Trash Day	Additional Watering Day
--------------------------	----------------------------

Monday

Thursday

Tuesday

Saturday

Wednesday

Saturday

Thursday

Sunday

Friday

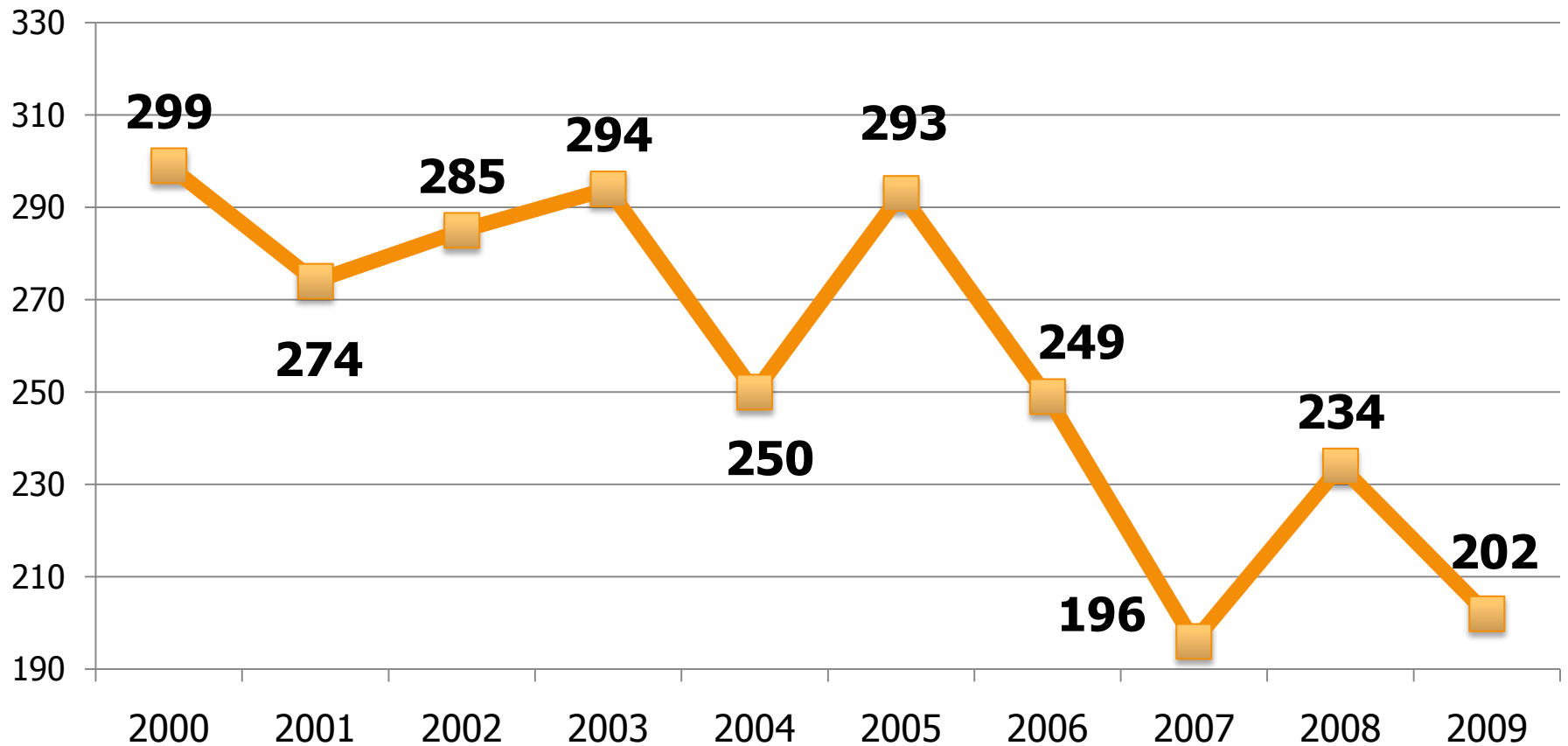
Tuesday

Water Efficiency Plan



Common Outdoor Water Uses	FALL & WINTER	SPRING & SUMMER	JULY 1- SEPT 30
	CENTRAL STANDARD TIME	DAYLIGHT SAVING TIME	SUMMER RESTRICTIONS
Using a Sprinkler System	1 Day/Week Recommended	2 Days/Week Recommended	Mandatory Watering Schedule
Time-of-Day Restrictions	None	Watering prohibited from 5am – 8am & from 10am – 6pm	Watering prohibited from 5am – 8am & from 10am – 6pm

Annual GPCD





E stands for

Education

not Enforcement.

Free Sprinkler Checkups





FREE IRRIGATION AUDIT
972-292-5800

FRISCO

FRISCO




































Sprinkler System Worksheet

Residents Learn How To:

- Find and repair minor broken or misaligned sprinkler heads.
- Make scheduling adjustments to their controller.
- Increase their efficiency with retro-fit devices like a smart controller or rain/freeze sensor.

SPRINKLER SYSTEM CHECK-UP WORKSHEET



This check-up form identifies ways to improve your system's efficiency, potentially saving you water and money on your monthly water bill.

For questions or feedback send an email to waterwise@friscotexas.gov or call (972) 292-5800.

DATE _____ TIME _____

NAME _____

ADDRESS _____

PHONE () - _____ CONTROLLER _____

EMAIL _____ Sign up for the weekly watering recommendations! ☐

SPRINKLER SYSTEM REVIEW

ZONE	AREA	GPM	TIME	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				
8				

* Use manual cycle to supplement new watering program.

SUGGESTIONS

☐ Summer Watering Days: Sa - M - T - W - Th - F - Sa

☐ Recommended Start Times: _____

☐ Recommended Hours: 8:00-1:00am & 6:00-7:00am

☐ Rain/Freeze Sensor or Smart Controller _____

☐ Tree Irrigation Bags & Soaker Hoses _____

☐ Precipitation Rate: _____

☐ Gallons Used Per 10 minute Cycle:

NOTES: _____

MANUFACTURER/PARTS: _____

I, the entitled Frisco Water Customer, understand that I am entitled to only one irrigation check-up per year. I understand that I am under no obligation to accept any of the recommendations and/or adjustments made by the Irrigation Specialist.

Frisco Water Customer _____ Date: _____

OFFICE USE
IWS ☐
BWS ☐
TCA ☐
SCP ☐
INITIAL _____

Weather Station

Weekly Watering Recommendations

- **Calculate and monitor our daily ET rate.**
- **Provide weekly recommendation on**
www.friscotexas.gov/water
- **Send weekly emails to list residents.**



Evapotranspiration

Temperature



Relative Humidity



Wind Speed

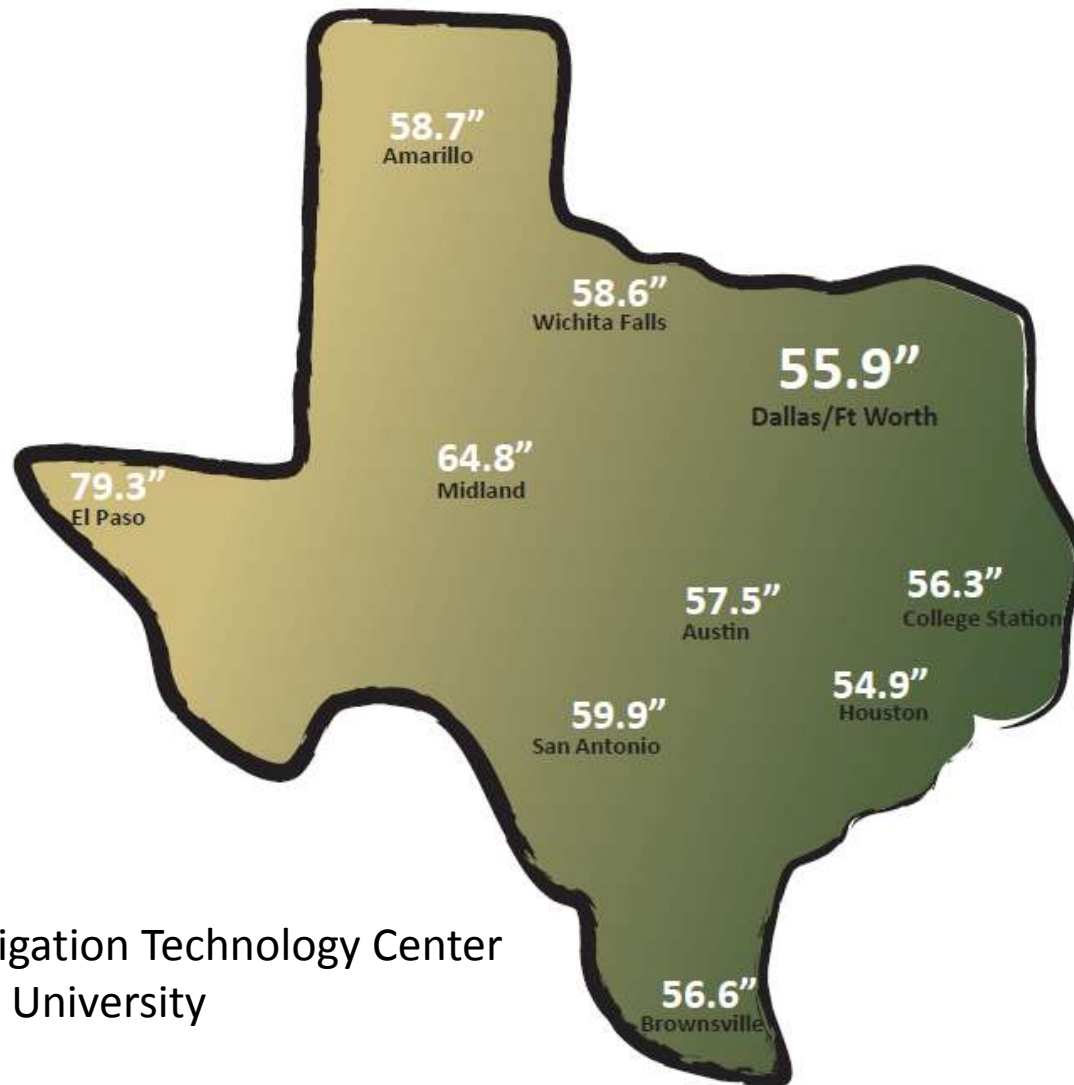


Solar Radiation



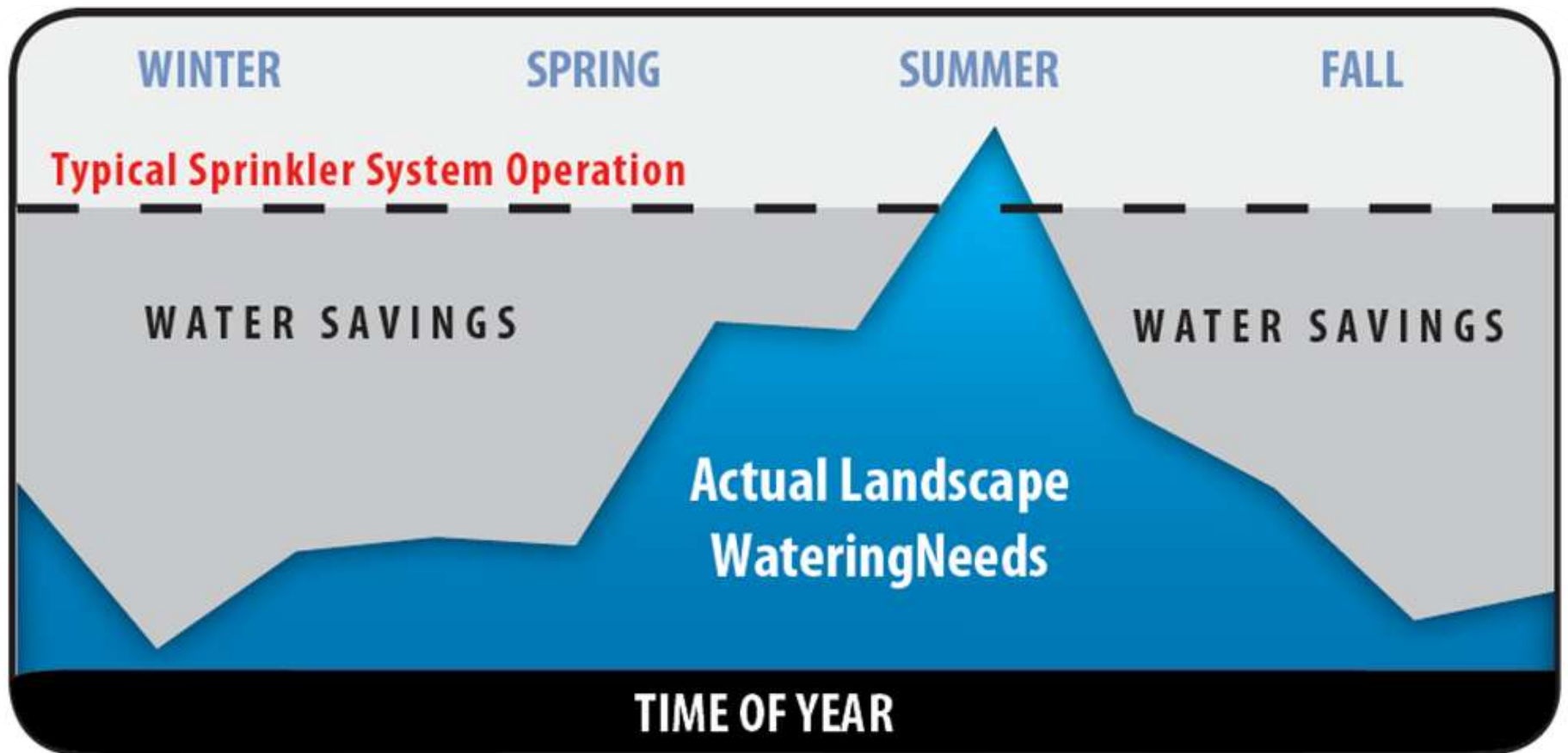
- **It's the amount of moisture absorbed into the atmosphere through evaporation from the soil and transpiration from plant surfaces.**
- **Several factors such as temperature, relative humidity, wind speed, and solar radiation affect Evapotranspiration values.**

Annual Historic ETo Values




Source: Irrigation Technology Center
Texas A&M University

ET Benefits



Weekly Watering Recommendations



 Send	To...	YOU...
	Cc...	
	Subject:	City of Frisco's Weekly Watering Recommendation 10/5 - 10/11

Weekly Watering Recommendation
for Monday (10/5) - Sunday (10/11) is:

Trash Day – 0 in
Additional Day – 0 in

Thanks for using water wisely!

Weather Station

Weekly Watering Recommendations

- **Calculate and monitor** our daily ET rate.
- **Provide weekly recommendation on** www.friscotexas.gov/water
- **Send weekly emails to** list residents.



Weekly Advice



From Oct 2009 through Sept 2010:

Watering Recommendation	# Weeks	Total %
"No Watering"	33	63%
1x/wk	16	31%
2x/wk	3	6%
Total	52	100%

Smart Controller Program

- **Launched July 2007**
- **New sprinkler systems require smart controller**
- **Existing sprinkler systems are eligible for \$100 rebate incentive on water bill**
- **Homeowner receives yard sign**
- **Requires an annual membership renewal**





FRISCO
Water  **Wise**

USE WATER WISELY

ET CONTROLLER SITE

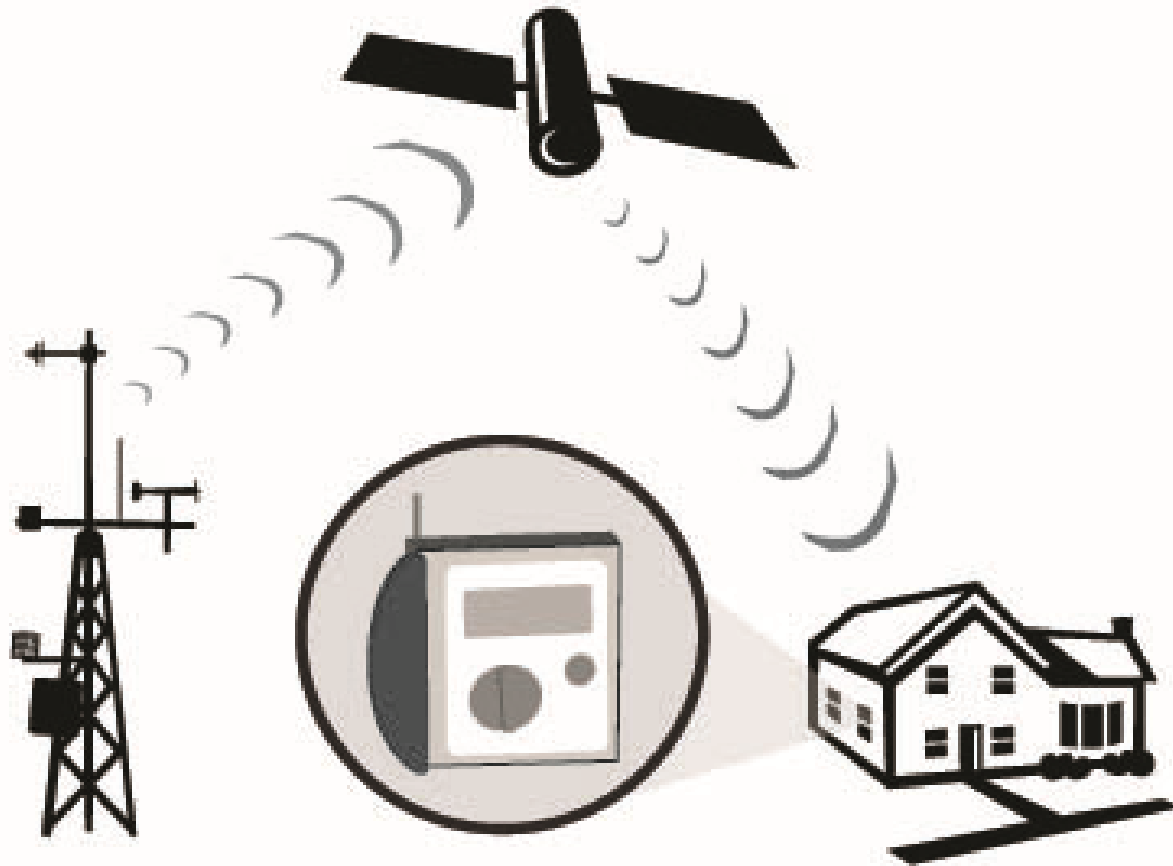
www.friscotexas.gov/water

972-292-5800



Weather Data Subscription

1



On-Site Weather Monitor



2

Soil Moisture Sensor

3



Manufacturer	Weather Data	Model
<u>Acclima</u> www.acclima.com 972-727-8356	Requires a soil moisture probe.	Acclima 
<u>Baseline</u> www.baselinesystems.com 866-294-5847	Requires a soil moisture probe.	WaterTecS100 
<u>ET Water</u> www.etwater.com 214-908-2388	Requires web-interface for programming.	Smart Controller 
<u>Hunter</u> www.hunterindustries.com 800-733-2823	Requires an on-site weather monitor.	ET System 
		Solar Sync 
<u>Irritrol</u> www.irritrol.com 800-634-8873	Requires a subscription an with off-site weather station.	Smart Dial 

Qualifying Controllers

Water Use Comparison Reports

Outdoor Water Needs and Water Usage Report for 2007



Property:	
Address:	XXXXXXXXXXXX
Estimated irrigated area (square feet):	3,265
Estimated outdoor usage (gallons per month):	12,888

Total Water Usage (gallons)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2006	25,430	25,020	45,530	45,040	41,180	35,430	31,880	30,340	44,700	27,280	36,880	31,000	361,260

This is your total indoor and outdoor water use by month. To see your estimated outdoor water use, please refer to the solid line in the graph below.

Estimated Outdoor Usage (gallons)

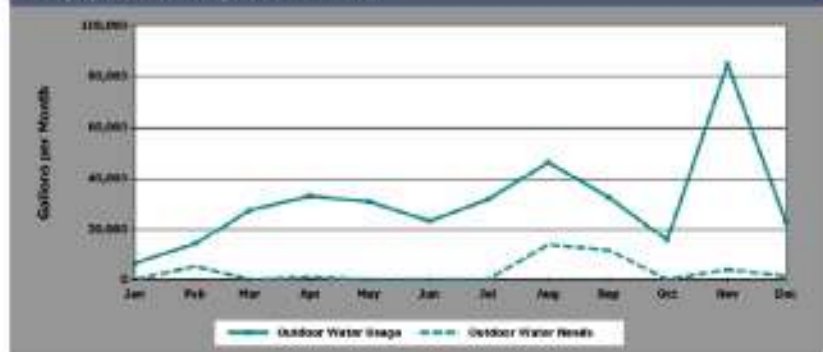
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2006	4,400	8,945	27,327	32,176	31,180	23,400	31,880	31,628	21,692	25,700	21,262	21,720	302,338

This is your total estimated outdoor water use that exceeded the beneficial amount of water needed to maintain a healthy and beautiful landscape. To prevent and how we determine our landscape water needs, please visit the information below the graph.

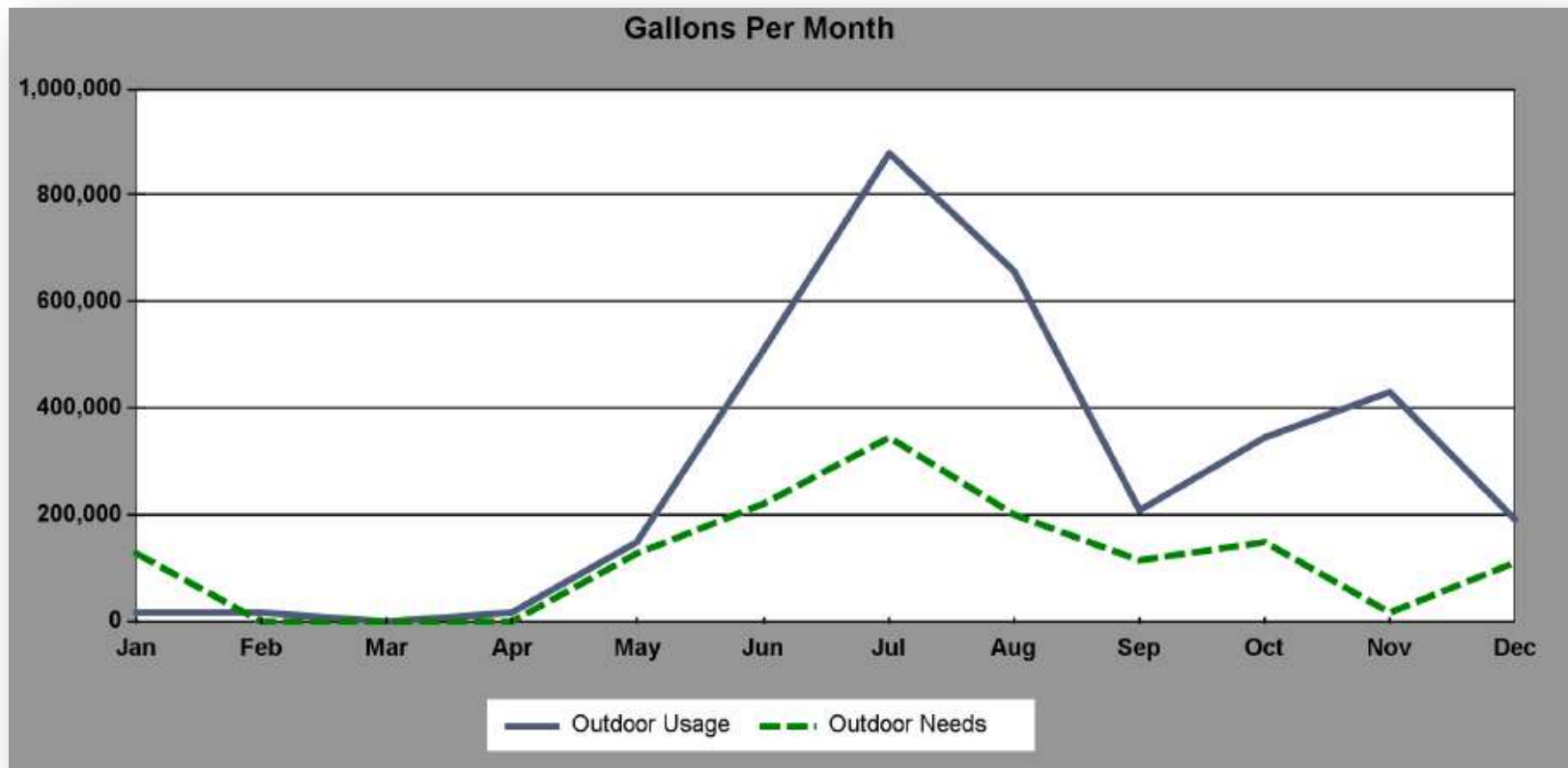
Total Potential Savings:

Based on the Outdoor Usage (gallons):	\$10,750
Water cost (\$1,000 per):	\$2.00
Total Potential Savings:	\$933.21

Your Property's Outdoor Water Usage vs. Outdoor Water Needs



Not So Smart Controller



Account Data



Estimated Irrigated Area (square feet)	154,882
Estimated Indoor Usage (gallons per month)	12,000

Total Proposed Savings	
Total Excess Outdoor Usage (gallons)	2,119,774
Water Cost (\$/1000 gal)	\$2.98
Total Potential Savings	\$6,316.93

Landscape Water Allowance Program

- **Notify property owners that they exceeded the LWA limit**
- **Assess the annual total amount of water that was required to keep plant material healthy**
- **Provide schedule a free irrigation system consultation**



Notification

Landscape Water Allowance Program

Dear WILLOW BAY HOA,

After assessing your property's landscape water consumption for 2009, our staff found that your water usage was well above the annual total amount of water that was required to keep your plant material healthy. Your landscape property is unique because it has a customized Landscape Water Allowance (or LWA). This tool identifies the healthy watering balance necessary for the size of your property and your plant material.

There may be several reasons for exceeding your LWA limit. An improperly set irrigation controller could explain the higher than normal water use. A less obvious explanation may be an undetected leak in your irrigation system.

See your property's water usage for 2009 below:

Your Landscape Water Allowance	Your Actual Water Usage	Percent of Overwatering	Total Inches of Water Applied to Your Landscape
249,202	3,136,000	1158.4%	361.6"

The difference between your LWA and actual water usage shows that you could have saved a significant amount of money and water last year.

Please contact us sometime before May 1st to schedule a free irrigation system consultation. Our on-staff licensed irrigation specialist will help you determine why your property's irrigation system is watering more than it was designed for. The solution may be as simple as a tweak in your irrigation controller's programming.

We recommend that you arrange to have your hired landscape professional available at the time of your free consultation. Please call or email me to set up for your consultation.

Sincerely,
Melody Emadiazar
Water Education Coordinator
City of Frisco, Public Works Department
memadiazar@friscotexas.gov
972-292-5814

www.friscotexas.gov/water

Check for Leaks

10% of homes have leaks that waste more than **90 gallons a day.**



WaterSense labeled fixtures can save a family up to \$2,000 in water bills over lifespan of the products.

Check for Leaks

Inside

Toilets – rubber flappers

Faucets – worn out washers

Showerheads – “O”rings



Outside

Spigot – loose connection

Irrigation System – broken sprinkler heads, worn valves

EPA WaterSense Program



EPA
WaterSense
PARTNER

WaterSense Label



Products

Bathroom Sink Faucets
Flushing Urinals
High-Efficiency Toilets
Landscape Irrigation Services
Showerheads
Weather or Sensor-Based
Irrigation Control Technologies

FriscoGreenLiving.com



Green Living

Latest News

- ▶ At Frisco's IKEA store, Blue and Yellow Mixes with a Green Approach
- ▶ Target Adds Recycling Stations to Frisco Stores
- ▶ For Frisco's Tanja Eltze, Living Green Is Part of Making a Difference
- ▶ Frisco Celebrates 40 Years of Earth Day with 'Clean It & Green It' Event
- ▶ Time to Switch Your Sprinklers; City of Frisco's Water Management Plan in Effect
- ▶ Ask the Green Expert: Making Your Own Rain Barrel
- ▶ Seasonal Watering Tips
- ▶ Green Kids' Art Contest Celebrates 40th Anniversary of Earth Day
- ▶ Frisco Mercantile Attracts Recycling Artisans
- ▶ Recycling Fees to Be Added to Water Bills

Ask the Green Expert: Making Your Own Rain Barrel

By Laura Gorecki

One of my personal goals is to always look for more ways to "Be Green". I plan to expand my home gardening this year and I had been considering buying a rain barrel for my yard. I was surprised to find out commercial models can cost as much as \$150 or more for a one-barrel system.

After reading an instruction sheet on the Internet on how to make a rain barrel at home, I decided to give it a shot. I had a large garbage can in the garage that we were not using, and I thought it would do the trick.

I took my instruction sheet to Home Depot to get the supplies. A worker helped me find everything I needed. I got the parts to make a 2-barrel system, and planned to add the second barrel later. I opted for a \$7 splitter attachment that allows for 2 hoses to be connected to one faucet. The cost for all of the materials was about \$40.

I got home and learned that my garbage can had a small hole in the bottom so it would not hold water. Back to Home Depot I went. I found 32-gallon heavy-duty trash cans, with lids, for \$14.95 each so I bought two of them. That brought my cost up to \$70 for two barrels.



The finished rain barrel. (Photo: Laura Gorecki)

Air & Water



How Much Do I Water?

The City of Frisco recently completed the installation of its weather station and remotely placed rain gauges. Data collected from the weather station can help determine weekly watering recommendations for Frisco residents.

[Read more](#)



Checking for Leaks

Being handy around the house doesn't have to be difficult. Common types of leaks found in the home are leaking toilet flappers and dripping faucets. These types of leaks are easily correctable, in most cases requiring only a few tools and hardware that can pay for themselves in water savings.

[Read more](#)



Free Irrigation Check-Ups

We would like to help you save water and keep a beautiful landscape. Learn how you can reduce your outdoor water use and maintain a healthier landscape by scheduling a free irrigation check-up with the City of Frisco's Irrigation Specialist.

[Read more](#)



Annual Drinking Water Reports

The City of Frisco provides an annual water quality report to its water customers. It summarizes information regarding Frisco's water sources, any detected contaminants found in the water, special health effects, compliance and educational information.

[Read more](#)

Outreach Efforts

Tips on Selecting an Irrigation Professional

April 2010 - from the monthly posts by Mike Barth for "Mike's Advice"

There comes a time when hiring an irrigation professional becomes necessary. I am frequently asked by residents for recommendations on sprinkler repair companies. There are a few things to keep in mind when deciding on which company to hire.

1. Look for a *Licensed Irrigator* – Make sure to verify that the person you hire has gone through the proper training to get a license. Licensed irrigators attend ongoing annual training to ensure they stay up to date on the latest technology to help you maximize your landscape watering.
2. Ask for references – You want a company that has customers who are willing to back up their claims of good service.
3. Ask about experience working in Frisco – We have unique regulations here in Frisco that must be followed and you want to be sure the specialist you hire is familiar with those regulations.
4. Find out if the specialist is familiar with your specific smart controller –Many different systems are on the market and they all operate differently. You want a professional who can make sure your equipment is operating at its full potential. They also should be able to show you how to operate the controller and answer any questions you may have about the system.
5. Ask friends and neighbors about irrigators they have hired – If they had a good or bad experience with someone they worked with their input can be very helpful. Find out what concerns, questions, and issues they came across in their experience so you know what to expect.

Walk your system frequently, especially after mowing, to become familiar with your equipment. The key to avoiding water waste is catching the problems early.



Follow Us On Twitter!

***Tweak (don't tweet)
your sprinkler
system for free!***



www.twitter.com/CityofFriscoTX

Workshops



- **Make Your Own Rain Barrel**
- **Lawn Care 101**
- **Texas Gardening**
- **Irrigation 101**
- **Drip Irrigation**
- **Composting**
- **Pruning**
- **Fall & Winter Care**

STORM WATER & WATERSHED PROTECTION



August 30, 2010



Water Resources



- **Drinking Water**
 - Surface and ground water.
- **Wastewater**
 - Drinking water that returns to creeks and lakes.
- **Reuse Water**
 - Diverted water used to irrigate parks, athletic fields, and golf courses.
- **Storm Water**
 - All the water that flows into streams, creeks, and lakes.

What is Storm Water?



The term refers to how water, from all sources, contributes runoff to a lake, river, stream or wetland.

Common sources include:

Rainfall runoff

Water use from construction sites

Excessive lawn watering



Why Protect Our Watershed?



Storm water picks up chemicals, waste, and trash that are not naturally found in our waterways.

Common forms of pollution:

- Residential
- Industrial
- Construction



Storm Water Regulations



- **Federal**

- Environmental Protection Agency's Clean Water Act of 1972

- **State**

- Texas Commission on Environmental Quality

- **Local**

- Frisco's *Storm Water Management Plan* and Storm Water Utility Fee.

Storm Water Management Plan



Best Management Practices (37 BMPs)

- On-going educational programs
- Street sweeping
- Culvert and inlet cleanouts
- Creek maintenance
- Plan reviews
- Inspections and reporting
- Municipal facilities improvements
- Modified storm water policies and development practices

How Can We Succeed?



Yard

Don't over fertilize.
Sweep (do not wash) fertilizer and soil off driveways and walkways.



Car

Maintain your car to prevent oil leaks and recycle used motor oil by taking it to Frisco's Environmental Collection Center at 6616 Walnut St.



How Can We Succeed?



Home

Use nontoxic or natural household cleaning products. Recycle or properly dispose of household chemicals.



Pet

Pick up pet waste from yards, trails and sidewalks. Pet waste contains bacteria that washes into our waterways.



Questions?

Contact us at:

waterwise@friscotexas.gov

972-292-5814

www.friscotexas.gov/water